UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

October 13, 2015

Jill A. Moore, Field Manager
Egan Field Office
Bureau of Land Management
702 North Industrial Way
Ely, NV 89301-9408

Subject: Draft Environmental Impact Statement for the Bald Mountain Mine North and South Operations Area Projects, White Pine County, Nevada
[CEQ # 20150221]

Dear Ms. Moore:

The U.S. Environmental Protection Agency (EPA) has reviewed the above referenced document. Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) NEPA Implementation Regulations at 40 CFR 1500-1508, and our NEPA review authority under Section 309 of the Clean Air Act.

The Proposed Action would combine and expand the existing Bald Mountain Mine North Operations Area and the South Operations Area. In addition to the Proposed Action, the Draft Environmental Impact Statement (EIS) evaluates the Reconfiguration Alternative, the Western Redbird Modification Alternative, and No Action. BLM did not identify a preferred alternative. When a lead agency elects not to identify a preferred alternative in the Draft EIS, it is EPA policy to rate individual alternatives. Based upon our review of the Draft EIS, EPA is rating the Proposed Action and both action alternatives as *EC-2 – Environmental Concerns - Insufficient Information* (see enclosed "Summary of EPA Rating Definitions"). Although we have environmental concerns about all of the alternatives, we note that the Western Redbird Modification Alternative would result in 63% less surface disturbance than would the Proposed Action, and would minimize groundwater impacts to springs and seeps, avoid potential impacts to 32.88 acres of wetland vegetation, and provide the widest mule deer migration pathways. Our detailed comments are enclosed.

We appreciate the opportunity to review this Draft EIS, and request a copy of the Final EIS when it is filed with our Washington, D.C. office. If you have any questions, please call me at (415) 972-3521, or have your staff contact Jamey Watt at (415) 972-3175.

Sincerely,

Kathleen Martyn Goforth, Manager
Environmental Review Section

Enclosures: (1) EPA's Summary of Rating Definitions and Follow-Up Action
(2) EPA's Detailed Comments

cc: Bruce Holmgren, Nevada Division of Environmental Protection

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

U.S. EPA Detailed Comments on the Draft Environmental Impact Statement for the Bald Mountain Mine North and South Operations Area Projects, White Pine County, Nevada – October 13, 2015

Alternatives

The Proposed Action would disturb 6,903 acres in addition to the 10,515 acres previously approved by BLM. Compared to the Proposed Action, the Western Redbird Modification Alternative would decrease the planned new surface disturbance by 63%. The corresponding reduction of impacts to vegetation, wildlife habitat, visual, paleontological and cultural resources would be directly proportional to the predicted decrease in proposed surface disturbance, which would also avoid and minimize potential impacts related to reclamation efforts needed in the area in the future. Significantly, the Western Redbird Alternative is the only alternative evaluated in the DEIS that would not include mining operations below the groundwater table. Compared to the Proposed Action, this would avoid the loss of 32.88 acres of wetland vegetation, as well as an unidentified acreage of phreatophytic vegetation. Additionally, the decreased surface disturbance would allow for the widest mule deer migration pathway.

> **Recommendation:** Select an alternative that would minimize surface disturbance and avoid mining operations below the groundwater table.

Adaptive Waste Rock Management Plan

The most recent draft Adaptive Waste Rock Management Plan (AWRMP) for the proposed project was produced in June 2012. During inter-agency administrative reviews, EPA commented on the draft AWRMP, and BLM responded to comments on April 11, 2014 and October 24, 2014. The Draft EIS identifies mitigation measures relevant to waste rock management, but it is unclear whether they are consistent with, or included in, the draft AWRMP because an updated, all-inclusive AWRMP is not included in the Draft EIS.

> **Recommendation**: Include the Adaptive Waste Rock Management Plan in the Final EIS as a consolidated, comprehensive document that identifies, in one place, how better understanding and characterization of the site geochemistry will be incorporated into waste rock management throughout mine life. Depending on the length, EPA recommends that either the entire or an abridged version of the AWRMP be incorporated into the Final EIS as an appendix, not just as a reference.

It is unclear in the Draft EIS how the different volumes of waste rock that would be generated by each of the action alternatives would affect waste rock geochemistry and net neutralization. In the June 2012 AWRMP, figures 13 and 14 on pages 22 and 23, respectively, depict the volume of potentially acid generating (PAG) and non-PAG waste rock from each pit. For pits such as Redbird, Winrock, Rat and Gator, which have a proportionally greater volume of PAG material, it is unclear how the reduced volume of waste rock (and potentially less volume of non-PAG rock) in the Reconfiguration Alternative and Western Redbird Modification Alternative would affect the net neutralizing capacity and to what extent there would be a greater risk of generating acidic seepage.

Recommendation: In the Final EIS, discuss and clearly compare the changes in the relative proportions of PAG and non-PAG waste rock within the context of overall volume of waste rock associated with each of the action alternatives.

In Table 2.4-54, there are references to both "WRMP" and "AWRMP".

Recommendation: If these acronyms both describe the same plan, revise this table to ensure consistency and clarity. If these acronyms describe different plans, include further detail in the Final EIS to differentiate between the two.

Water Quality - Surface Water and Groundwater

The discussion of surface water quality of springs and seeps on pages 3.3-20 and 3.3-21 directs the reader to Appendix B for the water quality monitoring data and identifies exceedances of municipal or domestic supply standards for several parameters at several springs. It is unclear whether these exceedances may be the result of contaminant releases from past or current mining in the area. Additionally, arsenic concentrations above the water quality standard for livestock are reported at the Cracker Johnson Spring No. 1.

The discussion of groundwater quality on page 3.3-21 notes that, in the general project vicinity, Nevada water quality standards are met. The exception is arsenic, which exceeds the MCL standard of 0.01 mg/L in wells ARW (0.0214 mg/L), BMM-1 (0.07 mg/L) and BMM-2 (0.031 mg/L).

The two paragraphs above note a common trend of metals, especially arsenic, being elevated in both surface water and groundwater. Furthermore, on page 3.3-32, the Draft EIS states that more recent investigations under legacy rock disposal areas showed that arsenic has some mobility in the upper few feet of soil. EPA is concerned that elevated metals concentrations in surface water and groundwater could be the result of past and existing mining activities in the area and could be exacerbated by the proposed project.

Recommendation: Include in the Final EIS an examination of water quality data trends from all surface water and groundwater monitoring locations. Provide monitoring data to determine whether present background concentrations in both surface water and groundwater were caused by previous mining activities – especially for arsenic. Other potential contaminants (e.g. antimony, mercury, selenium, nitrates) should be evaluated by comparing trend data to demonstrate whether or not impacts from previous mining have occurred. Discuss, in the Final EIS, potential sources of these contaminants, and describe mitigation measures to prevent degradation of water quality from mining activities.

We also recommend that Table 3.3-5 and tables in Appendix B include aquatic life criteria, which are relevant to the quality of surface water (including springs) in the mine area and are, in some cases, more stringent than the drinking water criteria and, in many cases, more stringent than irrigation or stock water criteria.

Water Quantity - Impacts to Springs and Seeps

The Proposed Action and the Reconfiguration Alternative involve groundwater pumping and drawdown that would impact springs and seeps in the North Operations Area. Table 2.8-1 on page 2-240 notes that the reduction and potential cessation of flows in springs and seeps could result in the long-term loss of

"32.88 acres of wetland vegetation that occurs within the maximum extent of the 10-foot groundwater drawdown contour." The loss of 32.88 acres of wetland vegetation in an arid environment is a dramatic loss that warrants greater analytical discussion.

> **Recommendation**: Include in the Final EIS a thorough discussion of how decreases in wetland vegetation in the North Operations Area would affect wildlife resources.

The prediction of impacts to seeps and springs, and the resulting potential loss of 32.88 acres of wetland vegetation, is based on the 10-foot groundwater drawdown contour shown on Figure 3.3-17 on page 3.3-40. The Draft EIS provides only a minimal explanation of the models and calculations used to derive the 10-foot groundwater drawdown contour. Without further explanation, it is difficult for the reader to draw the connection between a 10-foot groundwater drawdown contour and the predicted resulting effects on springs, seeps, and wetland vegetation areas. Impacts to vegetation can occur as a result of substantially less groundwater drawdown; therefore the loss of wetland vegetation may be greater than predicted in the Draft EIS. While EPA understands that analysis of a groundwater table drawdown contour less than 10 feet may present a modeling challenge, such uncertainty alone should not preclude the consideration of potentially significant environmental impacts.

> **Recommendation**: In the Final EIS, explain why and how the 10-foot drawdown contour was used to evaluate risk to springs and seeps. Given the correlation between the contour calculation and the impact on wetland vegetation, provide further details on the confidence of this calculation, the factors of uncertainty within the calculation, and whether estimated calculations are conservative.

The Draft EIS discusses monitoring and mitigation measures that address the potential for groundwater pumping to impact baseflow in springs and seeps and reduce wetland vegetation. In particular, on page 3.3-65, WR-1 Springs and Seeps discusses how Barrick Gold U.S., Inc. would expand the Integrated Monitoring and Mitigation Plan to include more robust sampling and develop a mitigation plan to offset potential impacts. "*The plan would define offsite mitigation to restore or reclaim natural spring and wetland areas on BLM land in the district. The plan would be subject to BLM approval prior to initiation of the project.*" The discussion of WR-1 does not disclose how these impacts would be mitigated nor the effectiveness of mitigation, and it defers development of the Plan to an unspecified time in the future.

> **Recommendation**: In the Final EIS, discuss the availability and viability of offsite mitigation of wetlands vegetation in other areas of BLM land in the district. This information should be presented clearly within a comparative context and include reasonable timeframes for completion of mitigation efforts.

Growth Media

On page 3.4-7, the Draft EIS indicates that approximately 5.4 to 10.4 million cubic yards of growth media would be available from the North and South Operations Areas collectively. The Draft EIS then states that salvageable growth media may be insufficient due to steep terrain, limited thickness, and rock fragment content. It is not clear how much suitable growth media will be available for reclamation. With the potential for insufficient salvageable growth media, reclamation activities may depend on the use of soil amendments. The Draft EIS does not disclose the estimated amount of soil amendments needed nor the source of such amendments. It is also unclear whether the relative amounts of salvageable growth

media and availability of soil amendments would impact decisions on soil depths to be used for reclamation activities.

> **Recommendation:** Discuss in the Final EIS the contingencies in place relative to how much soil will be available for reclamation and how much additional soil amendment may be needed. If additional soil amendments would be needed to improve the growth media, include a brief discussion as to the quantities available, how this material would be acquired, and from what off-site location(s) it would be obtained and transported.

The draft Adaptive Waste Rock Management Plan and page 3.3-50 of the Draft EIS indicate that all rock disposal areas would have an overall positive net neutralizing potential and would be covered with six inches of soil material. The draft AWRMP indicates that the six-inch cover would support vegetation reestablishment and minimize infiltration. EPA remains concerned that a six-inch cover of soil material on the rock disposal areas may not be an adequate thickness for cover that would not only accommodate successful revegetation, but act as a store-and-release cover as well.

> **Recommendation:** Explain in the revised Adaptive Waste Rock Management Plan and the Final EIS the basis for BLM's determination that 6-inches of cover material would be adequate to limit infiltration into the rock disposal area. EPA also recommends that the revised Adaptive Waste Rock Management Plan include provisions to continue to study whether additional growth media and soil cover will be needed to effectively preclude meteoric water from infiltrating rock disposal areas.

Climate Change

On December 18, 2014, the Council on Environmental Quality released revised draft guidance for public comment that describes how Federal departments and agencies should consider the effects of greenhouse gas emissions and climate change in their National Environmental Policy Act reviews. We believe the CEQ revised draft guidance outlines a reasonable approach, and we recommend that the BLM use that draft guidance to help outline the framework for its analysis of these issues.

EPA appreciates that the Draft EIS addresses the subject of climate change and includes a calculation of the project's approximate CO_2 emissions. While the Draft EIS states that "the tools necessary to quantify incremental climate impacts of specific activities associated with those factors are presently unavailable" and "as a consequence, impact assessment of effects of specific anthropogenic activities cannot be performed", we note that the estimated GHG emissions can serve as a reasonable proxy for climate change impacts. Lastly, the Draft EIS does not discuss potential mitigation measures for reducing or minimizing greenhouse gas emissions.

> **Recommendations**: Utilize the estimated GHG emissions as a reasonable proxy for climate change impacts when comparing the proposal and alternatives. Consider potential mitigation measures for reducing greenhouse gas emissions. Identify, in the Final EIS, all relevant, reasonable mitigation measures that could reduce greenhouse gas emissions, even if they are outside the jurisdiction of the BLM, and thus would not be committed to as part of BLM's Record of Decision[1]. We offer the following potential measures for the BLM's consideration:

[1] As explained in the Council on Environmental Quality's Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, "This will serve to [46 FR 18032] alert agencies or officials who can implement these extra measures, and will encourage them to do so."

- Incorporate energy efficiency measures and appropriate alternative energy components into the project, such as on-site solar and/or geothermal power generation;
- Use conveyors rather than haul trucks wherever feasible, e.g., for transporting ore to processing areas and the heap leach facility; and
- Offer ride sharing or shuttle opportunities for mine employees commuting to the site from both nearby and distant communities.

Closure, Reclamation and Post-Closure

The Draft EIS provides few details in describing the heap leach draindown predictions. The draindown management needs are unclear because the site-specific data used and timeframes analyzed are not provided in the Draft EIS. This information should be clearly disclosed, as it relates to the impacts of the mine proposal, and would be important in facility closure and reclamation activities.

> **Recommendation:** Include in the Final EIS the modeling calculations and parameters used for the determination of heap leach facility draindown characteristics and constituent concentrations over time, especially focusing on the inclusion of Bald Mountain Mine site-specific data currently available.

According to the Draft EIS, post-closure fluid monitoring would continue for a minimum of five years for each closed component. While it is helpful to know the minimum monitoring requirements, it is most important to also consider the maximum requirements for the purpose of determining long-term treatment; corresponding operations, maintenance, and monitoring requirements; and respective bonding.

> **Recommendation:** Adopt a conservative approach to long-term requirements, including those for monitoring and treatment, as necessary, as long as draindown solutions or leachate are discharged, for the purposes of closure planning and bond determination. Address this issue in the Final EIS.

Bonding and Financial Assurance

The adequacy and viability of the reclamation bond and any additional financial assurance can be a critical factor in whether or not a project is environmentally acceptable – especially in considering long-term post closure operations, maintenance and monitoring.

> **Recommendation:** Identify in the Final EIS the bond amounts for each closure and reclamation activity at all of the proposed project facilities. Specify who would be responsible for any post-closure cleanup actions should they be necessary.

Discuss in the Final EIS whether long-term post-closure operations and maintenance or monitoring may be necessary, describe these activities, indicate the projected costs for these activities, and discuss any requirements BLM would impose on the mine operator to establish a trust fund or other funding mechanism to ensure post-closure care, in accordance with 43 CFR 3809.552(c). The financial assurance necessary to fund post-closure activities must be kept current as conditions change at the mine, and BLM should ensure that the form of the financial assurance does not depend on the continued financial health of the mine operator or its parent corporation. If a trust fund would be needed, the Final EIS should include a general description of the trust fund. The mechanics of the fund are critical to determining whether sufficient funds would be available to implement the post-closure plan and reduce the possibility of long-term contamination problems.

Applicant-Committed Environmental Protection Measures

EPA notes that Table 2.4-54 on page 2-116 identifies several design features and Applicant-committed Environmental Protection Measures that are tied to the existing mine owner Barrick Gold U.S., Inc. Absent these Applicant-committed Environmental Protection measures, the environmental impacts associated with the proposed project would be greater for a number of resource areas. It is important to also note that the Draft EIS' analysis of potential direct and indirect impacts from the Proposed Action assumed the implementation of design features and Applicant-committed Environmental Protection Measures.

Recommendation: Include all Applicant-committed Environmental Protection Measures discussed in the Draft EIS as enforceable commitments in the Final EIS and Record of Decision.